Saving Cork City? Place attachment and conflicting framings of flood hazards

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ABSTRACT

Conflicts in flood hazards decision-making and policy have important implications for both disaster risk reduction and climate change adaptation. This study uses a frame analysis to examine the disputed Lower Lee Flood Relief Scheme in Cork, Ireland. This analysis reveals a multi-party and multi-perspective dispute that is more complex than the two sided conflict it may appear to be at first glance. However despite this diversity of views, many of the stakeholders involved share similar assumptions about flood risk and its management, reflecting the role of a dominant discourse in setting the boundaries of debate. Place attachment emerges as a key cross cutting theme, of importance to both opponents and proponents of the proposed scheme. Place attachment can act as either a barrier to transformative adaptation or as a motivator for action. While highlighting areas of disagreement between local stakeholders, conflicts such as the Cork dispute can also represent new opportunities to engage wider constituencies with hazards management and to bring new perspectives into the decision-making process. The emergence of place attachment as a cross cutting theme illustrates that using place as a boundary concept around which to centre the decision-making process may allow for the testing of new approaches to hazards management and climate change adaptation. These would incorporate both a wider range of stakeholders including those not directly impacted by hazards, and a broader range of issues, situating hazards management within a wider context.

1. Introduction

Environmental hazards can be the subject a wide variety of diverse, dynamic and ambiguous interpretations (Mitchell, 2016, 2006), and divergent interpretations can lead to disagreement (Butler et al., 2016). The politics of flood hazards management are often disputes about survival, security, and fear (Warner, 2011). Conflicts in flood hazards decision-making have important implications for both disaster risk reduction and climate change adaptation. Their practical effects can include delays to hazards mitigation plans, increased costs, or amplified losses if additional floods occur during the intervening time. However disputes can also offer important insights into the complex ways in which individuals and groups interpret the causes and consequences of hazard events. Studies of conflict in hazards management have used the lens of framing (Tebboth, 2014) or discourse analysis (Revez et al., 2017) to analyse divergent viewpoints. Research on varied understandings of climate change adaptation has also utilised the concept of frames (Fleming et al., 2015; Funfgeld and McEvoy, 2014). There is also an increasing recognition that place attachment (Chapin and Knight, 2015; Clarke et al., 2018, 2016) and urban imaginaries (Gross et al., 2019; Tozer and Klenk, 2018) play important roles in shaping interpretations of environmental challenges.

This paper uses a frame analysis to explore a flood risk management dispute in Cork City, Ireland and in doing so it develops three main arguments. The first is that a frame based analysis provides important insights into the ways in which groups and individuals interpret environmental risks. These include the ways in which frames can be combined to support particular desired outcomes, the ways in which frame analysis can be used to contextualise disputed fact claims in addition to disputed values, and the ways in which debate can be shaped by the relationships between frames and a wider dominant discourse. The second is that while conflicts and disagreements in hazards management present many challenges, they can also represent important opportunities to form new constituencies of concerned stakeholders and to introduce new insights into the decision-making process. The third argument is that hazards management conflicts must be understood within a wider context. Sense of place and urban imaginaries of the future emerge as cross cutting themes, illustrating that the roots of the conflict may lie not just in competing views of flood risk management, but in contrasting attachments to urban spaces and divergent visions of the future city.

2. Frames and discourses

The concept of framing has been widely used as a social science tool

for the analysis of environmental conflict (Brummans et al., 2008; Buijs et al., 2011; Davis and Lewicki, 2003; Lewicki et al., 2003; Shmueli, 2008; Tebboth, 2014; Vincent and Shriver, 2009; Webb and Raffaelli, 2008). Framing is used in a number of disciplines and subfields including communication and media studies, behavioural science, sociology, political science, and environmental policy analysis (Funfgeld and McEvoy, 2014). Partly as a consequence of this diversity, the concept has often been loosely conceptualised (Entman, 1993; Funfgeld and McEvoy, 2014). Framing has generally been understood in three distinct ways. Frames have been described as cognitive analytical devices or lenses through which people make sense of complex issues, as deliberate communication messages used strategically to build support for a desired outcome, and as a tool for social science analysis and conflict resolution (Shmueli, 2008).

In the cognitive understanding of frames as analytical devices, they allow people to make assumptions about the purposes and goals of policy and decision-making, and in doing so they bring together facts, opinions, values, beliefs and interests (Funfgeld and McEvoy, 2014). Framing is seen as operating at an individual or collective level (Fleming et al., 2015) and as an automatic, unavoidable and often subconscious process that leads to the creation of multiple parallel interpretations of a particular reality (Fleming et al., 2015; Funfgeld and McEvoy, 2014). Analysing frames as the cognitive devices through which individuals or groups make sense of an issue, allows for the unearthing of the underlying assumptions and worldviews behind particular positions (Funfgeld and McEvoy, 2014; Miller, 2000). Framing as communication is usually a collective enterprise as it involves agreement and group identification (Brummans et al., 2008; Shmueli, 2008). Frames are narratives or storylines (Dewulf, 2013) that allow groups or individuals to hold profoundly different views on an issue despite having access to similar information (Tebboth, 2014). Frames are also dynamic and groups or individuals may reach the same conclusions despite using different frames to do so (Fleming et al., 2015). Whether seen as sense-making devices or as deliberate communication strategies, frames become filters through which informative is sifted (Tebboth, 2014). They increase the salience of some information while simultaneously reducing the importance of other aspects of an issue (Entman, 1993). Frames are also both descriptive and prescriptive (Rein and Schon, 1996), and they make normative assumptions about the optimal outcomes from particular decisions (Funfgeld and McEvoy, 2014).

In this paper frames are understood as both sense making devices and deliberate communications strategies. It is also recognised that frames may not be self-evident and they can be constructed in different ways by the researcher (Rein and Schon, 1996). Utilising frames as a data analysis technique inevitably involves the construction of frame categories through inferences and interpretations of the available data (Rein and Schon, 1996). As research constructs, frames represent an imperfect but useful tool for the analysis of conflict. The value of exploring frames is not limited to simply illustrating the different frames that have been used, frame analysis allows for an examination of interactions, overlaps and relationships between different interpretations (Fleming et al., 2015).

While many social science studies of environmental conflict have utilised frame based approaches, others have deployed the analytic lens of discourse analysis (Revez et al., 2017), although terms frames and discourse are often used interchangeably (Fleming et al., 2015). However this interchangeability fails to acknowledge important differences between the two concepts. While frames can be said to be held by individuals or groups, discourses operate at wider level and cannot represent the interpretations of one individual or group. Discourses are produced and reproduced through a variety of practices, acts and institutions in multiple locations (Hajer and Versteeg, 2005; St. Martin and Wing, 2007). Discourses create a conceptual environment within which knowledge and understandings are produced (Oppermann, 2011, 2013). Multiple framings are possible within one discourse (Fleming

et al., 2015) and framing can be a discursive process (Funfgeld and McEvoy, 2014). While scholars of policy analysis have used the concepts of discourses and frames within a single theoretical approach, particularly in examinations of discourse coalitions, (Fischer and Forester 1993; Hajer 1995; Palmer, 2010) few studies have utilised both concepts to explore interpretations of hazards or climate, and in particular to explore the emergence of multiple framings within an existing dominant discourse. Fleming et al. (2015) have pointed to the need for further work that explores the relationships between framings of climate change adaptation and underlying discourses and logics. In this paper the concept of frames is used to explore multiple interpretations presented by local individuals and groups within an ongoing dispute about hazards management, while the term discourse is used to describe wider dominant assumptions about flood hazards management that are embedded in and reproduced through institutions, policies and practices.

3. Place, hazards and climate

There has been an increasing focus among scholars of sustainability and environmental change on the importance of sense of place and place attachment in shaping both framings of environmental issues and in motivating behaviour. The roots of this interest can be traced to phenomenological perspectives within human geography and to a focus on place attachment in environmental psychology (Devine-Wright, 2013). Definitions of both sense of place and place attachment focus on the meanings, values, and emotional attachments that people associate with particular locations, often based on their experiences and interactions with those spaces (Agyeman et al., 2009; Clarke et al., 2018, 2016; Chapin and Knight, 2015; Devine-Wright, 2013; MacGillivray and Franklin, 2015; Tuan, 1977).

Some scholars draw a distinction between place identity and place dependence, with place identity referring to the emotional connections to a particular location, and place dependence referring to the ways in which a particular space can meet the needs and goals of a particular individual or group (Chapin and Knight, 2015; Jorgensen and Stedman, 2001). Direct experience and ongoing engagement with particular places is seen as critical in maintaining the strength of place attachment (Chapin and Knight, 2015). Consequently it is often assumed that collective sense of place will be strongest with regard to local spaces. However recent scholarship has also pointed to ways in which broader transnational sense of place can develop to support environmental concern and actions (Gurney et al., 2017). Social and mass media can also act to make identities and senses of place more cosmopolitan and multi scalar (Chapin and Knight, 2015). Place has increasingly been explored as a boundary concept, that is a concept of shared interest but with sufficient interpretative flexibility that it can bring diverse perspectives into conversation (MacGillivray and Franklin, 2015). However multiple place identities can emerge in the same location as individuals and groups value the same spaces for different reasons (Chapin and Knight, 2015).

Studies of place attachment and climate change adaptation have emerged from two perspectives, examining either how sense of place can act as a motivator for adaptation behaviours (Amundsen, 2015) or how strong place attachment may act as a barrier to transformative adaptation (Clarke et al., 2018, 2016) Place attachment can be a more effective tool for encouraging adaptation than climate impacts, and a variety of strategies can be deployed to strengthen place attachment (Amundsen, 2015). However a strong sense of place can act as a barrier to transformative adaptation, unless that place is significantly disrupted by place climate impacts (Clarke et al., 2016). Place attachment can motivate a variety of behaviours with regard to environmental and sustainability challenges, including actions that are diametrically opposed (Chapin and Knight, 2015).

Interactions with particular spaces and the place identities and dependencies associated with them can also change through time (Chapin

and Knight, 2015). Thus place has temporal as well as spatial dimensions (MacGillivray and Franklin, 2015). The future temporal dimensions of sense of place in cities are to some extent explored through the theme of urban imaginaries. The concept of imaginaries has increasingly being deployed in environmental and sustainability fields to explore the ways in which individuals and groups frame visions of the future, although the concept has been defined in several different ways. Urban imaginaries are defined as cognitive mappings and interpretations or urban spaces and places (Lindner and Meissner, 2019) while socio-technical imaginaries have been defined as collective visions of desirable futures (Gross et al., 2019; Jasanoff and Kim, 2015). Competing imaginings or re-imaginings of the city can lead to conflict and disagreement over development goals and objectives (O'Callaghan and Linehan, 2007). Through political work, imaginaries can act to shape the material world (Gross et al., 2019). Different imaginaries of urban environmental and sustainability futures may send cities on distinct development paths (Tozer and Klenk, 2018).

4. Context and case study

Cork is the second largest city in the Republic of Ireland and flooding has been a feature of life in the city since its foundation. Much of the city centre is located on a low lying island surrounded by two tidal channels of the River Lee and it is exposed to fluvial and coastal floods (Jeffers, 2014; Tyrrell and Hickey, 1991). While two upstream hydroelectricity dams have been used to attenuate smaller flood events (Fitzpatrick and Bree, 2001), a large river flood in 2009 caused extensive damage (Jeffers, 2011) and is reported to have led to estimated economic losses of €90 m (OPW, 2017). The capacity of the dams to control river floods is disputed and has been the subject of ongoing litigation.[1] While tidal floods have typically been less destructive, a large coastal flood in 2014 led to economic losses of €40 m (OPW, 2017). River flood severity is expected to increase as a result of climate change (Guerreiro et al., 2018).

Until recent decades flood hazards policy in Ireland was focused on the drainage of agricultural lands. While the protection of urban areas from flooding had become an increasing focus during the 1980s and 1990s, a series of flood events in the early 2000s prompted a comprehensive national review of flood policy (O'Neill, 2018). This review called for a catchment based flood risk management approach that would include a range of non-structural measures rather than an emphasis on flood defences (OPW, 2004; O'Neill, 2018). Efforts were also made to integrate flood risk management and planning with the development of national flood planning guidelines (O'Neill, 2018). Despite this apparent shift towards land use planning and non-structural approaches, a structural approach has remained dominant (Jeffers, 2013a). Flood hazards management is centralised with the Office of Public Works (OPW) playing a dominant role as the national flood risk management agency (Clarke et al., 2016). In recent years flooding policy has been driven primarily by the requirements of implementing the European Union Floods Directive. This has been conducted through the drafting of Catchment Flood Risk Assessment and Management Plans (CFRAM). Despite the national roll out of CFRAM plans there has been little public debate on national flood policy (Devitt and O'Neill, 2016). A number of recent studies have examined flood risk management and decision-making in Ireland highlighting the importance of a range of issues including risk perception and communication (Bradford et al., 2012; Fox-Rogers et al., 2016; O'Sullivan et al., 2012) and the

roles of experience and distance from the hazard (O'Neill et al., 2016) in shaping interpretations of risk.

The proposed Lower Lee Flood Relief Scheme is designed to protect over two thousand properties and involves a mix of measures including new dam operating procedures, a flood forecasting and warning system, designation of upstream washlands to facilitate increased dam discharges, localised flood defences to protect individual properties between the dams and the city, a flow reduction and diversion structure on the south channel to divert increased flows into the north channel, flood walls, temporary demountable defences, and a network of pumping stations to remove any water that may accumulate inside the flood walls as a result of rainfall or infiltration (OPW, 2017). The scheme is a key part of the OPW's National Flood Risk Management Programme and is the largest flood relief scheme to be proposed in Ireland to date (OPW, 2017). It is the culmination of a ten year process that began when the OPW commenced the LEE CFRAM study in early 2006.

The process of planning this scheme appears to have attracted little public attention until December 2016 when the proposal flood relief scheme went on public display. Around this time the Save Cork City (SCC) campaign group was formed and since then it has conducted a high profile campaign of opposition to the proposals. SCC have described themselves as a group of professionals and local residents. SCC have formulated alternative proposals which reject any direct flood defences in the city centre and instead propose that flooding can be prevented through the construction of a tidal barrier and upstream flood management (either using the dams or natural flood management techniques). In response to the publicity generated by SCC's opposition the OPW extended its original deadline for public submissions from February 17th to April 7th 2017. The OPW received over one thousand submissions from individuals and groups, with most of these coming during the extended time period (OPW, 2017). In December 2017 the OPW published an Exhibition Report which details the OPW's response to objections and concerns raised in the submissions (OPW, 2017). However it also outlines their intention to proceed with the scheme as planned, subject to a number of minor modifications. At the time of writing the dispute remains ongoing as the OPW attempts to proceed with implementation and the SCC group remains committed to their opposition.

At first glance the disagreement that has been seen in Cork throughout since December 2017 appears to be a battle between two main actors. On one side sits the OPW as the proposers of the scheme and the State agency with the power to drive its implementation. Opposing them is the SCC campaign, determined to resist the scheme and to advocate for alternatives. However there are many other parties actively involved. While they have stayed largely silent throughout the current dispute, the two local authorities in the Lee Catchment, Cork City Council and Cork County Council are partners in the proposed scheme with the OPW. The scheme is also supported by the two business representative bodies, the Cork Business Association which represents small businesses in the city centre, and the Cork Chamber which represents companies throughout Cork City and surrounding areas. The two business associations have collaborated to support the scheme, although they have encouraged the OPW to make some minor changes. Other stakeholders who have opposed the proposed scheme include local environmental and community groups as well as national conservation groups such as the Irish Georgian Society. A range of small businesses and individuals have also supported the SCC campaign while the Irish National Flood Forum, a voluntary body representing property owners who have suffered flood losses, has supported the proposed scheme.

5. Data collection and analysis

This paper draws on qualitative analysis of a wide range of sources including interviews with local stakeholders, documents produced by both the OPW and SCC, blog posts, newspaper opinion pieces,

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[1] University College Cork (UCC) has sought damages from the dam operators, the Electricity Supply Board (ESB) for losses arising from the 2009 flood. In a 2015 judgment the High Court found ESB to be 60% liable but found UCC to be 40% liable for failure to take reasonable steps to prepare for flooding. The ESB appealed that judgment and in March 2018 the Court of Appeal found in their favour. A further appeal to the Supreme Court by UCC remains pending.

Table 1
List of interviewees.

Interviewee	Position	Frames used
Small business owner 1	In favour of scheme and highly critical of SCC	Business first
Writer	Opposed to scheme and strongly supportive of SCC	Aesthetic & amenity; disruption
Small business owner 2	Opposed to scheme. Critical of SCC	Sceptical
Ecologist 1	Opposed to scheme but somewhat critical of SCC and other opponents	Ecological; health & wellbeing; sceptical
Business representative	In favour of scheme. Critical of SCC but also somewhat critical of OPW decision-making process	Business first
Local resident 1	Opposed to scheme and supportive of SCC	Aesthetic & amenity; ecological
Artist 1	Opposed to scheme and supportive of SCC	Aesthetic & amenity; ecological; sceptical
Ecologist 2	Opposed to scheme and supportive of SCC	Heritage; aesthetic & amenity; sceptical
Former public representative	Opposed to scheme. Views of SCC not clear	Ecological; aesthetic & amenity; heritage; sceptical
Cultural manager	Opposed to scheme and supportive of SCC	Aesthetic & amenity; sceptical
Artist 2	Opposed to scheme and strongly supportive of SCC	Aesthetic & amenity; health & wellbeing; disruption; ecological
Small business owner 3	Opposed to scheme. Views on SCC not clear	Heritage; aesthetic & amenity
Local resident 2	In favour of scheme. Critical of SCC but also somewhat critical of OPW decision-making process	Risk management; aesthetic & amenity
SCC representative	Opposed to scheme	Heritage; aesthetic & amenity; disruption; sceptical
Environmental group representative	Opposed to scheme. Views on SCC not clear	Ecological; health & wellbeing

submissions made to the OPW that were posted online by their authors, social media posts, YouTube videos and the transcript of a national parliament committee meeting. Semi-structured interviews were completed with 15 local stakeholders in Cork City during April and May 2017 (see Table 1). Most participants were selected through purposive sampling, focusing on individuals or groups who had publically participated in the dispute either through making statements to the media or social media posts. A small number of additional participants were subsequently added through snowball sampling. 48 individuals and organisations were invited to participate through a combination of phone and email contacts but many either declined to participate or did not respond. All interviews were recorded with the consent of the participants and transcribed verbatim. Participants were asked how they would like to be identified in research outputs and the descriptors used in this paper are those chosen by the interviewees. Reports, documents and presentations produced by the OPW and SCC were downloaded from their websites between April 2017 and February 2018. 25 relevant documents were initially identified (23 OPW, 2 SCC) ranging in length from 1 page to over 500 pages. Following an initial examination 10 documents (8 OPW, 2 SCC) were selected for full coding (See Table 2). The remaining OPW documents were excluded due to repetition and overlap with others that had been selected, or due to a focus exclusively on technical information. While not included in the more detailed analysis the excluded documents provided important contextual information on the proposed scheme. All pages of the OPW project website for the scheme were downloaded for analysis on two dates, in November 2017 and again in February 2018. The SCC Facebook and Twitter pages were examined from their inception in December 2016 and January 2017 respectively until February 5th 2018. All posts made by SCC during this period (589 Tweets and 728 Facebook posts) were analysed but retweets or shares of material posted by other groups or individuals were excluded. 6 short YouTube videos produced by SCC were also analysed. A combination of links from social media accounts and online searches were used to find any relevant blog postings or opinion pieces referring to the dispute, and any submissions made to the OPW that were posted online by their authors (8 documents). On October 18th 2017, representatives of the OPW and SCC were invited to appear as witnesses before the Oireachtas Committee[2] on Culture, Heritage and the Gaeltacht. The full transcript of this meeting was also included in the analysis.

All data was analysed using NVivio 11 qualitative analysis software. Coding of the documents took place over several steps that combined

the use of themes identified in advance and inductive coding of themes that emerged from the data (Clarke et al., 2016; Braun and Clarke, 2006). Some themes were identified during transcription of the interviews while others were added during a first round of coding. This first round involved inductive coding all interviews and documents producing a large number of codes. These were then simplified to focus on the framings that were used most prominently in the dispute. All the initial codes were subjected to a second round of coding using these themes. The social media data was then coded separately using the same simplified list of frame codes.

Utilising such a wide range of sources presents some challenges as they vary in both the quantity and quality of data they provide. The analysis draws most heavily on the interviews, documentary sources, and the transcript of the Oireachtas Committee meeting as these provide the most detailed accounts of the positions adopted by key stakeholders in the dispute. The analysis of social media data provided less detailed accounts of the positions and framings used and these have been used mainly for corroboration and context.

6. Framings in Cork

While at first glance the conflict appears to a be a straightforward dispute between those who oppose the scheme and those who support it, applying the lens of framing reveals that the perspectives of the actors in this dispute can be categorised into eight frame categories (see Tables 3 and 4). These framings are based on a range of underlying assumptions about the causes and consequences of flood events, the viability of various flood mitigation options, and the relative importance of other values such as heritage, amenities, and the business environment of the city.

Those who favour implementation of the scheme generally adopt one of two closely related framings. The OPW as the proposers of the scheme and supporters such as the Irish National Flood Forum view the scheme through a risk management frame that sees floods as a threat that is best managed through engineered flood prevention. This assumption is largely shared by users of a business first frame. This framing assumes that the interests of city centre businesses who are exposed to flooding must be prioritised. In this framing these businesses face an existential threat from future floods as they are no longer able to obtain flood insurance. The centrality of this concern was clear in interviews with business representatives and small business owners who support the scheme. As a business representative commented; *"Why would you encourage somebody to invest in a business, when you invest into fixtures and fittings, when it will flooded in six months' time and you have no recourse to insurance?"*. The interests of these business are seen as directly linked to the overall

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[2] Joint committee of both houses of the national parliament.

Table 2
Documents analysed.

Author	Date	Document title
Houses of the Oireachtas	18th October 2017	Transcript of the meeting of the Oireachtas Committee on Culture, Heritage and the Gaelteacht
Office of Public Works	2nd Feb 2017	OPW response to recent press coverage [press release]
Office of Public Works	March 2017	Lower Lee (Cork City) Drainage Scheme (Flood Relief Scheme) Options Report
Office of Public Works	March 2017	Lower Lee (Cork City) Drainage Scheme (Flood Relief Scheme) Phasing Report
Office of Public Works	December 2017	Lower Lee (Cork City) Drainage Scheme (Flood Relief Scheme) Exhibition Report
Office of Public Works	13th November 2017	OPW Presentation to Cork City Council Members
Office of Public Works	December 2016	Exhibition Posters
Office of Public Works	December 2016	Public Exhibition Brochure
Office of Public Works	December 2017	Project Update - Lower Lee (Cork City) Flood Relief Scheme: Projecting Cork from Future Flooding
Save Cork City	May 2017	Potential Cork – The Save Cork City Solution: A Progressive and economical flood management solution for Cork
Save Cork City	27th March 2017	Save Cork City Discussion Document presented to Cork City Council
Jer Buckley – Irish National Flood Forum	9th June 2017	Beautiful City: Our Homes by the Lee [blog post]
William Wall	30th March 2017	Prison Walls for a River: Walling Cork City [blog post]
Dan Boyle	13th April 2017	Imprisoning Cork [opinion piece published in broadsheet.ie]
GetCork.ie	Date unknown	Interview with John Hegarty – Save Cork City Campaign
Joe O'Shea	12th May 2017	Is Cork city ready for a leap forward [opinion piece published in the Evening Echo]
Cork Environmental Forum	April 2017	Cork Environmental Forum Response to Draft Lower Lee Flood Relief Scheme [submission to OPW]
EcCoWell Cork	21st February 2017	Submission on the Lower Lee Flood Relief Scheme
Irish Georgian Society	10th April 2017	Submission on the Lower Lee Flood Relief Scheme

Table 3
Frames and desired outcomes.

Frame	Actors	Assumptions	Desired outcome
Risk management	OPW, Irish National Flood Forum	Floods are a threat that must be prevented. The current scheme is the only viable option	Implementation of the scheme in full
Business First	Cork Business Association, Cork Chamber, some local business owners	Flooding is an existential threat to businesses and must be prevented. Insurance cover must be restored	Implementation subject to minor modifications
Aesthetic and Amenity	SCC, some local residents and business owners	Cork City is a unique place and the relationship that locals have with the river is of fundamental importance	No flood defences in the city centre. Increased access to the river. A tidal barrier and upstream management using dams and/or natural flood management
Heritage	SCC, Irish Georgian Society, other local community and environmental groups, some local residents and business owners	Cork City's riverside landscape is composed of internationally significant heritage and this must be protected due to its intrinsic value and economic potential	Restoration of quay walls and railings. A tidal barrier and upstream management using dams and/or natural flood management
Sceptical	SCC, some local residents and business owners	The proposed scheme will not work. Walls and pumps are likely to fail and this makes the scheme more dangerous than doing nothing	No flood walls or pumping stations in the city centre. No changes to flows in the North Channel. A tidal barrier and upstream management using dams and/or natural flood management
Disruption	SCC, some local residents and business owners	The current scheme will cause so much disruption that city centre businesses may close due to loss of trade	No construction work in the city centre. A tidal barrier and upstream management using dams and/or natural flood management
Health and Wellbeing	Some local residents and community groups, occasionally SCC	Access to the river is vital for the physical and mental health of the residents of the city. Any flood relief scheme must recognise this and the current scheme does not do so sufficiently	Varied. Some support for upstream management and a tidal barrier. A minority support more radical 'living with floods' options
Ecological	Cork Environmental Forum, ecologists, some local residents	Floods are a natural process and should be accommodated as much as possible	An alternative scheme, focused on a catchment management approach. Mixed views on tidal barrier

prosperity of the city centre, as closure of multiple businesses due to future flood losses is viewed as something that would damage the overall economy of the city. Users of both of these framings place a high degree of trust in the engineering expertise of the OPW and point to other schemes that are considered to be a success. For example in a blog post Jer Buckley of the Irish National Flood Forum made the following observations: *"Many people who have suffered from flooding in this country are beginning to see flood schemes delivered by the OPW do and have worked. I would ask the question what would have happened to the towns of Mallow, Fermoy and Clonmel with the severe flooding of December 2015 if these flood schemes hadn't been delivered?"*

Opponents of the scheme adopt a wider range of framings but these can be categorised into two groups, four framings that are widely used and two that are less common but can be considered as more radical voices within the debate. However there are also overlaps between some of these framings with many stakeholders deploying more than one frame to advance their arguments against the scheme. The four more dominant framings can be described as aesthetic and amenity, heritage, sceptical and disruption frames. In the aesthetic and amenity frame the urban spaces of the city and the amenities these offer are viewed as essential and as threatened by the proposed flood relief scheme. This view is encapsulated in the views of one local resident interviewed; *"It seems to be that didn't given remotely enough consideration to the amenity that the river is to the city, to the aesthetics of it, now I know aesthetics is always thought of as the icing on the cake or something you add on afterwards, but actually the way a city is experienced is crucial to its functioning as a city. People experience the city by being in it, walking around, looking at it, seeing the river"*. The heritage frame also focuses on the urban spaces of the city centre, seeing the built environment as being composed of heritage features of international significance. These include quay walls and riverside railings that may be removed or replaced as part of the flood relief scheme. This heritage is seen as important both for its intrinsic value and for its economic and tourism potential. In his evidence before the Oireachtas Committee, John

Table 4
Selected quotations for each frame.

Frame	Selected quotes
Risk Management	*"The Lower Lee (Cork City) Flood Relief Scheme was commissioned by the Office of Public Works with the objective of delivering a flood relief scheme for Cork City and environs to provide protection against the 1 in 100 year fluvial/1 in 200 year tidal flood events."* (OPW, 2017, p. 1)
Business First	*"Really at the end of the day all any of us are concerned with in here, as in trading in the plughole of the city, is will floods happen or will they be prevented from happening? Will the devastation be as chronic as it was or will the devastation be insured?"* (Interview – Small Business Owner 1)
Aesthetic and Amenity	*"It is still an essential element to the city to be able to walk along the river and to have the views across. To be able to see the water as well. The mix of river side walls and rails and open spaces is a really important part of what the city looks like and it's a really important resource for citizens as well. I think this new wall will completely transform that."* (Interview – writer)
Heritage	*"The historic centre of Cork is a unique urban landscape, which is the result of centuries of interaction between humans and nature. While it must be acknowledged that the character of the River Lee corridor cannot remain static, works which result in a significant or profound change to the historic character of the river corridor should only be pursued as a last resort in circumstances where there is no other alternative."* (Irish Georgian Society, Submission to OPW)
Sceptical	*"There was a group, from UCC I think, did a little experiment. They had a scale model of the valley that the city is sitting in. They passed water through it and they had walls set up and the water just permeated in on to the city side of the walls and it had no effect."* (Interview – Ecologist 1)
Disruption	*"I think that if we are going to have ten years of more disruption, people are just going to make another excuse, change their habits and what happens is that they will move by osmosis out to the supermarkets in the suburbs and they don't tend to come back into town."* (Eoin O'Mahoney, SCC YouTube Video)
Health and Wellbeing	*"In Cork City, the River Lee is a place of value for undertaking passive and active recreation. The prospective Lower Lee Flood Relief Scheme should aim to improve not undermine social value through sensible infrastructure and engineering choices. This decision should encourage to cycle and walk along the river in addition to recreational use of the river, thus enabling the natural environment to be experienced and accessed by all."* (Ecowell – Submission to OPW)
Ecological	*"Floods happen and you know for too long humans have approached nature as an adversary rather than something they need to co-exist with, to be part of. I think that skyscrapers are as natural as bee hives myself. I think we are extraordinarily arrogant to claim we are not part of nature."* (Interview - Local Resident 1)

Hegarty of the SCC group summarised this argument while advocating for an alternative tidal barrier; *"The tidal barrier would allow for the maintenance of the historic quay walls in the manner of many historic European cities. We see this as a major advantage to Cork if it is to develop as a city capable of growing and attracting investment in the future. We believe that Cork's historic quays should be nominated for UNESCO world heritage status".* Users of the sceptical frame suggest that aspects of the scheme will not work and may actually increase flood risk. Unsurprisingly this framing places a low level of trust in the engineering expertise of the OPW. For user of the disruption frame their primary concern is that the impacts of constructions works for the scheme would be more detrimental to businesses in the city than the impacts of flood events. This fear is shaped by previous experience of the implementation of the Cork Main Drainage Scheme. This was a ten year project, completed in 2014 which transformed the city's sewage system and reduced water pollution in the city. While the project was considered a success it resulted in significant traffic disruption. Some local residents and small business owners fear a repeat of that disruption and advocate for alternatives that would not involve major construction works in the city centre.

The SCC group and other opponents of the scheme uses the sceptical and disruption frames as additional arguments in ways that suggest that the aesthetic and amenity and heritage frames lie at the core of their objections to the scheme. However for some other stakeholders scepticism or a fear of disruption are central to their objections. These stakeholders often reject the framings used by other opponents of the scheme, despite their shared goal of opposing it. For example one small business owner who advanced a sceptical frame dismissed the aesthetic and amenity frame by commenting; *"The aspect of the view thing and people whinging about the changing the outlook of the city, and the look of the river, and the view of the river, and all of that, that's rubbish".* Another interviewee who opposes the proposed scheme also contested the aesthetic and amenity frame by describing a conversation with friends; *"A couple of very clever friends of mine were asking me recently about the wall and wondering why people are giving out about it so much. And I said well the OPW want to raise the level of the wall as a flood defence and in certain parts of the city it might obscure views of the river and that's going to break this connection that they feel they really have with the river. My friend was saying yeah we thought that as the case alright, but no one gives a shit about the river. People are throwing bottles into it. Nobody Kayaks in it. There are a couple of rowing clubs that use it. There is a swim once a year. People can claim to be connected to it but there is already a wall there and they are not really engaging with the river in any kind of compassionate sense anyway, so why not just build some more walls? That was a very refreshing view for me* because they were engaging with the fact that there was a problem but not jumping on the bandwagon of stop the wall, because it is overly simplistic" (Interview – Ecologist 1).

Despite their strong opposition to the scheme, in their views of proposed alternatives many users of these four framings illustrate underlying assumptions about flood risk management that are similar to those of proponents of the scheme. Users of these frames often propose a tidal barrier and increased use of upstream dams for flood control as alternatives to the OPW scheme[3] illustrating an underlying flood risk management approach that emphases flood control through engineering. However users of the ecological and health and well-being frames adopt alternative perspectives. The health and wellbeing frame emphasises the importance of the riparian environmental for the mental and physical health of the city's residents. In their submission to the OPW the Cork Environmental Forum comment: *"The amenity values of a river contribute to the general wellbeing of individuals and communities – including relieving stress and emotional and mental fatigue – often described as their 'restorative nature'. The plan should deliver the maximum potential for views of and access to the river for the citizens of Cork City and visitors to the city."* This framing shares much in common with the amenity and aesthetic frame but places a greater value on the health benefits of access to the river. While users of this frame recognise that flooding is a threat to the city that needs to be addressed, they believe it should be managed in a way that enhances the physical and mental health of the city's residents. Users of the ecological frame argue that rather than seeing flood waters as an enemy to be fended off, flooding must be seen as a natural river process. This viewpoint is summarised in the interview comments of a representative of an environmental group who suggested *"Flooding is a natural part of a natural system. We haven't designed what we have built around that very well to accommodate that. So we see the river as a problem rather than a solution to many things".* Some users of both these frames point to more radical approaches to flood risk management as potential alternatives to the OPW scheme. For example the representative from an environmental group suggested redesigning the built environment to increase access to the river and to allow for flooding; *"I think nobody is talking about planned retreat. Nobody is talking about whether we are living on the right streets in Cork. Maybe you should be looking at the South Mall, Oliver Plunkett Street and Patrick Street, that the ground floors have other uses".* They also added; *"We could change the look of the city very quickly and part of it might be changing how those buildings look. So that they can flood to their hearts content when they need to".*

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[3] As noted earlier, the OPW proposals actually already include changes to dam management practices.

Table 5
Selected quotes illustrating place attachment.

> *"There is a huge emotional investment in Cork City itself with the river, it is a badge of what a Corkonian is meant to be, it is like the song where 'we sported and played' and that type of thing. That is inculcated in a lot of Cork people from birth and there is a sense of affection, a sense of wanting to protect it."* (Interview – Former Public Representative)
>
> *"Now I'm not an architect and I'm not an engineer but I do have huge sensitivity for preservation and conservation of a city that is old, that you can walk around, that is surrounded by water, that is somewhere that I'm very proud to be trading in."* (Interview – Small Business Owner 1)
>
> *"I don't know when the last time any of them walked around Cork City was. If they had, and had done it with an open eye, they would have realised that they are walking around an absolutely beautiful city. Ok there are parts of it that could be lifted up a gear but there is some beautiful Georgian architecture around, especially looking on to the river, like on North Mall and on South Mall as well. I don't know why they would even want to tamper with the walls. There are landlocked cities that would kill to have vista like that, with beautiful old stone walls with a river behind it. We see seals there, I watch out for the herons there. There's always sea gulls on it."* (Interview – Small Business Owner 3)
>
> *"There is almost a soullessness in these proposals. What is being suggested is insensitive to the character of Cork City. It ignores the special position of the river in the history and culture of the city".* (Dan Boyle – Opinion piece in broadsheet.ie)
>
> *"Cork is a beautiful and strange city. The historic centre lies between two walls of water - the North and South branches of the river Lee. Originally a marsh divided into islands, the ghosts of the dividing channels still remain, bridged over and hidden but returning to haunt the city on rising tides at certain times of the year. It's a busy city, but there is a melancholy sweetness along the river on June or September evenings, the city tranquil, the river full, sunset softening the high houses on the ridge of the Northside. There is a watery quality to the light, good days or bad, and a shimmering, dancing wit in the people which I have always felt was related to the three waters of bog, river and the proximate ocean."* (William Wall – blog)
>
> *"Where Cork is quite unique we would say because of the two channels and it is a very particular, the whole shape of the city and the geography of the city, where the beauty of the city is formed between those two channels." (*Interview – Cultural Manager*)*
>
> *"I feel from this place to my bones. I meet people who are my friends and I feel that they are from this place as well. Their names are connected to the maritime history. They are connected to the trading cities that we traded with for hundreds of years in the UK and in the north of Europe. There is such a strong connection of the people to the river in that they made the quay walls with their hands."* (Interview – SCC Representative)

Table 6
Selected quotes on urban futures.

> *"I would dearly love to see more people actually living in the city. The South Mall which is just down there is full of banks, financial services, lawyers etc. has all these unoccupied top floors and the reason they are unoccupied is because it's not worth their landlords while to put in the fire exits to get them up to code, for the fire regulations and I think that if things like that were addressed, if there were ways of bringing more people to live in the city that would address many issues. Nowadays what is a city for? We don't manufacture in the city, is it just shops are we just a big old shopping centre? You know I don't think so. There needs to be places where people want to spend their lives."* (Interview – Local Resident 1)
>
> *"I ask committee members to cast their minds to Amsterdam, Bruges or any city that looks after its waterways and allows people to engage with them and see what the possibilities for Cork could be. We are here because we are afraid for the future viability of our city and the people living there, not just in terms of heritage but in terms of how people want to live and could live there."* (John Hegarty, SCC – Evidence to Oireachtas Committee).
>
> *"There should be people living over the shops. I live in the city and I love it. I'm just near UCC and I walk into town from there and I love it. I wouldn't live where I would have to drive. I much prefer this. More people should be encouraged to live in the city. There's not a beating heart in cities anymore. There just isn't and Cork definitely, it's not being well minded."* (Interview – Small Business Owner 3)
>
> *"Who owns Cork City? They really need to come back to who are they doing this for. It cannot be just for now. It has to be for future generations. It has to be. We are handing it over. We are only just custodians of it for a little while and then we hand it over. Who is in charge really? Who is it for?"* (Interview – small business owner 3)
>
> *"Personally I would like to see more people living in the city centre."* (Interview – Small Business Owner 2)
>
> *"The Save Cork City solution has come about from the recognition that what makes Cork special is extremely fragile. Proposals for flood relief walls may represent a final tipping point in Cork's future that would see much of the city's character and potential lost forever. Save Cork City believes that now is the time to reassess how we treat the extraordinary asset that is the historic landscape, and in particular the quayside landscape, of Cork City before it is too late to do so. We believe that works to Cork City should reveal the city's history, improve amenity and provide betterment of the city environment, opening up development potential and making Cork an attractive place to live and invest."* (Save Cork City – Potential Cork p. 4)

7. Place attachment and urban imaginaries

Across the eight framings used, a number of cross cutting themes emerge. Most prominent among these is a focus on place and on the future of the city (see Tables 5 and 6). While these themes are most prominent among opponents of the proposed scheme who use the aesthetic and amenity or heritage frames, they emerge across almost all frames. Cork is presented as a unique, special and vulnerable place to which locals profess a very strong emotional attachment. As a former public representative commented in an interview: "*I love my city. I think the river is a very important part of it*". While an attachment to the city as a unique and special place emerges from both opponents and proponents of the scheme, it is strongest among those who see the proposed scheme as a threat to the place. Fears for the future of the city if the scheme went ahead were expressed most passionately by a representative of the SCC campaign who commented "*I don't really want to live in this place if they vandalise it so badly*". In addition to exhibiting a strong sense of place, local stakeholders also situate their views on the proposed flood risk management scheme within the wider context of challenges facing the city. In interviews, stakeholders on both sides of the dispute spoke of a range of concerns including population decline in the city centre and loss of retail outlets and small businesses. Their discussion of the city and its future covered a wide range of topics related to urban planning, policy, decision-making, the liveability of the city and the business environment within the city. The risks presented by flooding, the proposed flood relief scheme, and some of the suggested alternatives were situated within this wider context. Opponents and proponents of the scheme present several distinct imaginaries of the future of Cork. On both sides their views are expressed in terms of hopes and fears for the future of the city. Supporters of the scheme see the OPW's plans as essential to securing the future of existing business activity in the city centre. Opponents see the proposed scheme as a greater threat than flooding, and suggest that the conflict has created opportunities for the emergence of new ways of thinking about the city's future. As a Cultural Manager commented in an interview; "*I think the outcome of what has happened is really interesting that the Save The City campaign has got people thinking about Cork more than ever and I think the outcomes of that alone no matter what happens is going to be phenomenal. Now you have a bunch of people who are looking at the city in a different way, who are beginning to articulate about their care for this place".*

8. Lessons from the Cork dispute

Having outlined the range of frames used by local stakeholders in Cork, the remainder of this paper considers what an examination of these frames reveals about the Cork conflict and its wider implications for hazards management and climate change adaptation.

8.1. Frames, discourses, and conflict

Frame analysis is an imperfect but valuable tool for examining disputes related to hazards management and climate adaptation. While the current dispute in Cork may appear at first glance to be a two sided conflict between the OPW and SCC, a frame analysis quickly reveals a more complex multi-party and multi-perspective dispute. Frames define problems (Entman, 1993) and make underlying assumptions visible (Funfgeld and McEvoy, 2014; Miller, 2000). The problems facing Cork city and its residents are defined in a number of different ways by a variety of actors based on a range of underlying assumptions. Making

these framings visible is an important first step in understanding any environmental conflict. Illuminating these framings may also help the actors involved to recognise the roots of the positions adopted by other parties (Shmueli, 2008).

The value of framing analysis goes beyond simply making frames visible. It is more important to consider the ways in which frames overlap, interact, and relate to each other (Fleming et al., 2015; Miller, 2000). Due to its differing disciplinary roots, the literature on framing tend to view frames as either cognitive sense making devices or communication strategies. However it is clear that for many of the actors involved in the Cork dispute frames are not mutually exclusive. Some participants combine two or more framings. Others adopt a primary framing which reflects their understanding of the issues (cognitive framings) but may use other secondary framings to advocate for particular options (communicative framings). The Cork case shows that recognising frames as fulfilling both of these roles helps to make sense of the complex ways in which actors use frames in overlapping ways, although it is sometimes difficult to clearly distinguish between cognitive and communicative frames.

Frames bring together both values and facts (Funfgeld and McEvoy, 2014), although studies of framing often focus on the former rather than the latter. However by making underlying assumptions clearer, a frame analysis also clarifies the fact claims being made, allowing for them to be assessed against available evidence. The ongoing debate in Cork has become increasingly centred around two questions, whether flood walls should be constructed in the city centre and whether a downstream tidal barrier represents a viable alternative. The extent of the convergence of the debate around structural solutions is visible in the SCC campaign. While SCC initially proposed both non-structural upstream flood management and a tidal barrier, their social media posts illustrate how their campaign has focused increasingly on the latter option. 199 social media posts refer to the tidal barrier compared to just 30 referring to non-structural upstream options. The framings used by many opponents of the scheme are based on the assumption that tidal flooding represents a more significant threat than river floods. This view persists despite historical evidence that the largest and most destructive floods experienced in Cork are river floods (Jeffers, 2014; Jeffers, 2011; Tyrrell and Hickey 1991) and increased river floods are predicted in the future (Guerreiro et al., 2018). Sea level rise is likely to increase exposure to coastal flooding but river flooding will remain a major challenge for the city. While studies of framing have often focused on the ways in which competing values lead to disagreement the Cork case illustrates how a frame analysis can also be used to make visible and test underlying fact claims and assumptions.

The increasing coalescence of the debate around flood walls and a tidal barrier also illustrates the importance of the relationships between the framings adopted by local stakeholders and wider discursive understandings of environmental hazards and their management. As noted earlier the importance of framing as a discursive process (Funfgeld and McEvoy, 2014) and the potential for multiple framings within a single discourse (Fleming et al., 2015) have been highlighted in existing literature. However few studies of hazards or climate adaptation have explored the emergence of multiple frames within an existing single dominant discourse and the relationships between frames and discourse in this context. An approach to flood risk management that emphasises flood prevention through engineering remains dominant in Ireland (Devitt and O'Neill, 2016; Jeffers 2013a, 2013b) and this is reproduced through institutions, policies and practices in ways that allow it to be described as a dominant discourse. While there are clearly areas of strong disagreement between the various parties to the Cork dispute, one of the most striking features of the frames used is the extent to which many local stakeholders share similar assumptions about flood hazards and their causes, about how knowledge about flood hazards should be produced and used, and about how floods should be managed. This is reflected in both proponents and opponents of the scheme with both sides sharing a preference for structural solutions that offer flood prevention through engineering. While users of the sceptical frame illustrate a lack of trust in the OPW's engineering expertise, they still exhibit trust in engineering expertise more generally. The only exception to this support for structural flood prevention is evident among some of those adopting an ecological frame, who emphasised natural flood management and alternatives forms of urban design. All sides also share an assumption that the State should play a leading role in flood hazards management and that this includes an obligation to fund the flood management options that are chosen. The development of the debate in Cork suggests that while frames can act to either constitute or contest an existing dominant discourse, that discourse can also limit debate, focusing it towards framings and outcomes that do not contest the overall assumptions underlying existing policy and practice. The ecological framing is the only challenge to this dominant understanding but it lacks sufficient support among local stakeholders to challenge the dominant flood control approach which is deeply ingrained in current policy and practice. The Cork case illustrates the need to recognise that while environmental conflicts emerge, the boundaries of the conflict and the range of outcomes considered is constrained by the wider discursive environment within which the dispute takes place.

8.2. Place, urban futures and opportunity in conflict

One of the most important aspects of frame analysis for understanding environmental conflict is that it allows for comparison and contrast between the positions adopted by a range of individuals and groups, highlighting both divergence and convergence in their positions and underlying assumptions. As noted earlier, in the Cork case sense of place emerges as a cross cutting theme that is influential in the frames that many local stakeholders have adopted. A strong sense of pride in and attachment to their city is common across many of the local stakeholders participating in this dispute, as is a strong fear that the future of the city that they love is under threat. The importance of place is often discussed in terms of hopes or fears for the future of the city. For business owners these wider fears for the city are also closely linked to personal fears about the future of their own businesses, combining a place dependence on the city centre as a space on which they depend economically, with wider place attachments. Fears for the future security and certainty of their livelihoods have motivated business owners on both sides of the dispute. For users of the business first frame, their fear is that a failure to implement a flood prevention scheme as soon as possible will lead to business closures and the death of trading activity in the city centre. For users of a disruption frame, their fear is that the process of constructing flood defences will lead to the same outcome. For users of a heritage frame, their fear is that the loss of heritage would transform the city to such an extent that it is no longer the city that they love. The politics of fear and insecurity often play a prominent role in flood disputes (Warner, 2011) while concerns over ontological security can also shape actions or inactions in the face of hazards or climatic changes (Norgaard, 2011). By linking sense of place to concerns over security of livelihoods and presenting alternate visions of the future of the city, local stakeholders are packaging together three themes that are often considered separately in the academic literatures on place, security and urban imaginaries. The fact that place attachment emerges as a theme on both sides of the debate confirms that it does not guarantee any particular set of outcomes or perspectives (Chapin and Knight, 2015). That place attachment is strongest among opponents of the scheme, some of whom are not directly impact by flood hazards, also confirms that place attachment can emerge as a barrier to transformative adaptation and that decision-making processes should include wider constituencies, not just those directly impacted by flood hazards (Clarke et al., 2018, 2016). However the centrality of place attachment and concerns for the future of the city also points to broader ways in which decision-making processes might be transformed by situating place at the centre of the decision-making

process from its inception, rather than allowing it to emerge as a potential barrier later. This alternative approach represents a potential opportunity that can emerge from conflict.

Suggesting that conflict presents an opportunity may seem counter intuitive, as it is clear that disagreements have many negative impacts. Interviewees described the emotional toll of participating in the dispute in addition to the time and resources which it has consumed. Considerable frustration is also evident in some of the documentary sources, perhaps most notably an OPW press release in February 2017. For proponents of the scheme, the dispute also represents a delay in what they believe to be a time sensitive project, potentially increasing the risk of uninsured losses if another flood occurs before completion of the scheme. However conflict can be viewed as an unavoidable and desirable feature of a democratic society (Flyvbjerg, 1998). Disagreement can be an opportunity for learning (Hulme, 2009). In the Cork case the conflict has produced a number of potential benefits. It has clearly engaged a new and much wider constituency of local stakeholders with questions of flood hazards management. Prior to the publication of the proposed scheme there had been little engagement with flood hazards planning in Cork and this was reflected in poor attendance at public consultation events organised by the OPW during earlier stages of the CFRAM process. This lack of engagement contrasts with the very large number of submissions received by the OPW during the spring of 2017. By bringing new perspectives to light, conflicts can also offer an opportunity to broaden the range of hazards management options that are considered. The value of broadening the range of alternative choices has been a prominent feature within natural hazards research, particularly the seminal work of Gilbert White on flood hazards in the United States (Mitchell, 2008). The Exhibition Report (OPW, 2017), illustrates that the opposition campaign has forced the OPW to explore a wider range of alternative options and to outline the reasons why these were rejected in favour of the current proposal.

The most significant opportunity to emerge from the conflict may be the ways in which it points to potential alternative approaches to decision-making. The concept of place has been proposed as a boundary device which can allow diverse academic disciplines to come into conversation (MacGillivray and Franklin, 2015). The centrality of place in the framings used in the Cork dispute suggests that the concept could play a similar boundary concept role in bringing together diverse constituencies of stakeholders in hazards management. This would focus on the potential for place to motivate adaptive behaviours (Amundsen, 2015) in order to attempt to prevent its emergence as a barrier (Clarke et al., 2018, 2016). While including a wider range of stakeholders within the decision-making process at the outset (Clarke et al. 2016) may offer a means of overcoming place attachment as a barrier to change, a more ambitious recasting of the decision-making process may prove more effective. The Cork case demonstrates that not only is place attachment (and to some extent place dependence) a significant concern for local stakeholders, this concern is bundled into a collection of concerns that includes flood hazards among several others. The framings they presented offer not only understandings of current issues in the city, they also present alternative normative visions of the future of the city. They use frames as narratives both to make sense of past experience but also to envision alternative futures (Flyvbjerg, 1998). While these contrasting visions and imaginaries of the future city illustrate the depth of the disagreement between the various parties in the dispute, they also demonstrate that an alternative broader decision-making process could be constructed around the concept of place, utilising urban imaginaries as scenarios for discussion, as each imaginary of the future can represent an alternative development trajectory (Tozer and Klenk, 2018).

The Cork case shows that in focusing directly on flood hazard and particularly on those stakeholders directly impacted by them, the decision-making process has excluded a wider range of concerns that have come together to help create opposition to the proposed scheme. Alternative decision-making processes need to include a wider range of stakeholders beyond those directly impacted by hazards, but also to include a wider range of questions for consideration, situating hazards in their wider context. Changing the decision-making process in this way would not be straightforward. It would require stepping outside current institutional structures and practices which often limit the scope of key agencies to clearly defined remits. For example in the Cork case, as the lead agency for flood risk management the OPW's remit is clearly constrained and cannot extend to other issues. Situating hazards management with the wider context of planning urban futures would require new decision-making structures, changing the roles of key state actors such as planning regulators and hazards management agencies, but also allowing for much more active stakeholder and public participation. While such change would be radical and transformative, there is an increasing recognition of the value of testing new and experimental approaches to decision-making such as those that facilitate co-production of knowledge by experts and local communities (Landstrom et al., 2011; Lane et al., 2011). The Cork case points to the potential for further radical experiments that would refocus the decision-making process around the wider goals and aspirations of urban citizens and stakeholders, exploring flood risk management within that wider context rather than as a stand-alone concern.

9. Conclusions

Conflicts and disagreements about decision-making choices related to environmental hazards and climate change adaptation are attracting increased attention from geographers and other social scientists. These conflicts provide valuable opportunities to explore the ways in which individuals and groups interpret and make decisions about risks and hazards. The Cork dispute confirms a number of findings in the existing literatures but also offers several important new insights.

The existing literature on frame analysis often understands frames as either cognitive sense making devices or as communication strategies. However using a frame analysis to analyse the Cork dispute highlights the value of combing both approaches in order to unpack the ways in which local stakeholders use multiple overlapping frames to outline their position, even when some of those frames are based on apparently contradictory assumptions. Cognitive and communicate frames can be combined to advance particular arguments, although clearly distinguishing one type of frame from another is difficult. Regardless of their origins it is clear that frames can be used in overlapping ways to argue for a particular desired outcome. The Cork case also highlights the importance of considering the ways in which framing occurs within an existing dominant discourse that may act to constrain the debates that take place, focusing the debate towards outcomes that do not contest the dominant understanding and excluding others that could be considered as more radical voices. In the context of flood hazards management the debate remains centred on engineering based approaches to flood prevention to the exclusion of alternatives.

The most important lessons offered by an analysis of the Cork dispute related to the role of place attachments in the framings adopted by local stakeholders. These frames bring together three themes that are often considered separately in academic research; place, security and urban imaginaries. The Cork case confirms that place can play a key role in both motivating adaptive behaviours and conversely as a barrier to transformative adaptation options. However by linking place, security and imaginaries the framings used also point to ways in which decision-making could be transformed in order to find pathways beyond disagreement. By broadening decision-making processes to include both a wider range of stakeholders who may not be directly impacted by hazards, and considering a broader range of issues by situating risk and hazard in a wider context, a place centred decision-making process offers an alternative platform for both hazards management and climate change adaptation.

Acknowledgements

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